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<110> Yaar, Liora
Alroy, Iris
Reiss, Yuval
Taglicht, Daniel N.

<120> POSH POLYPEPTIDES, COMPLEXES AND RELATED METHODS

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<141> 2004-04-05

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Ser Asn Ile Leu Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro
65                  70                  75                  80
Trp Lys Pro Gly Pro Gly Gly Gly Ser Gly Thr Asn Cys Thr Asn Ala
                85                  90                  95
Leu Arg Ser Gln Ser Ser Thr Val Ala Asn Cys Ser Ser Lys Asp Leu
            100                 105                 110
Gln Ser Ser Gln Gly Gly Gln Gln Pro Arg Val Gln Ser Trp Ser Pro
        115                 120                 125
Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
    130                 135                 140
Tyr Glu Gly Lys Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Ile
145                 150                 155                 160
Ile Ile Leu Arg Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val
                165                 170                 175
Asn Gly Ile His Gly Phe Phe Pro Thr Asn Phe Val Gln Ile Ile Lys
            180                 185                 190
Pro Leu Pro Gln Pro Pro Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu
        195                 200                 205
Val Lys Asp Lys Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp
    210                 215                 220
Asp Val Leu Thr Val Ile Arg Arg Val Asp Glu Asn Trp Ala Glu Gly
225                 230                 235                 240
Met Leu Ala Asp Lys Ile Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe
                245                 250                 255
Asn Ser Ala Ala Lys Gln Leu Ile Glu Trp Asp Lys Pro Pro Val Pro
            260                 265                 270
Gly Val Asp Ala Gly Glu Cys Ser Ser Ala Ala Ala Gln Ser Ser Thr
        275                 280                 285
Ala Pro Lys His Ser Asp Thr Lys Lys Asn Thr Lys Lys Arg His Ser
    290                 295                 300
Phe Thr Ser Leu Thr Met Ala Asn Lys Ser Ser Gln Ala Ser Gln Asn
305                 310                 315                 320
Arg His Ser Met Glu Ile Ser Pro Pro Val Leu Ile Ser Ser Ser Asn
                325                 330                 335
Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu Ser Gly Leu Ser Cys Ser
            340                 345                 350
Ala Pro Ser Gln Val His Ile Ser Thr Thr Gly Leu Ile Val Thr Pro
        355                 360                 365
Pro Pro Ser Ser Pro Val Thr Thr Gly Pro Ser Phe Thr Phe Pro Ser
    370                 375                 380
Asp Val Pro Tyr Gln Ala Ala Leu Gly Thr Leu Asn Pro Pro Leu Pro
385                 390                 395                 400
Pro Pro Pro Leu Leu Ala Ala Thr Val Leu Ala Ser Thr Pro Pro Gly
                405                 410                 415
Ala Thr Ala Ala Ala Ala Ala Ala Gly Met Gly Pro Arg Pro Met Ala
            420                 425                 430
Gly Ser Thr Asp Gln Ile Ala His Leu Arg Pro Gln Thr Arg Pro Ser
        435                 440                 445
Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu Leu
    450                 455                 460
Glu Leu Arg Lys Gly Glu Met Phe Leu Val Phe Glu Arg Cys Gln Asp
465                 470                 475                 480
Gly Trp Phe Lys Gly Thr Ser Met His Thr Ser Lys Ile Gly Val Phe
                485                 490                 495
```

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Pro Gly Asn Tyr Val Ala Pro Val Thr Arg Ala Val Thr Asn Ala Ser
            500                 505                 510
Gln Ala Lys Val Pro Met Ser Thr Ala Gly Gln Thr Ser Arg Gly Val
        515                 520                 525
Thr Met Val Ser Pro Ser Thr Ala Gly Gly Pro Ala Gln Lys Leu Gln
    530                 535                 540
Gly Asn Gly Val Ala Gly Ser Pro Ser Val Val Pro Ala Ala Val Val
545                 550                 555                 560
Ser Ala Ala His Ile Gln Thr Ser Pro Gln Ala Lys Val Leu Leu His
                565                 570                 575
Met Thr Gly Gln Met Thr Val Asn Gln Ala Arg Asn Ala Val Arg Thr
            580                 585                 590
Val Ala Ala His Asn Gln Glu Arg Pro Thr Ala Ala Val Thr Pro Ile
        595                 600                 605
Gln Val Gln Asn Ala Ala Gly Leu Ser Pro Ala Ser Val Gly Leu Ser
    610                 615                 620
His His Ser Leu Ala Ser Pro Gln Pro Ala Pro Leu Met Pro Gly Ser
625                 630                 635                 640
Ala Thr His Thr Ala Ala Ile Ser Ile Ser Arg Ala Ser Ala Pro Leu
                645                 650                 655
Ala Cys Ala Ala Ala Ala Pro Leu Thr Ser Pro Ser Ile Thr Ser Ala
            660                 665                 670
Ser Leu Glu Ala Glu Pro Ser Gly Arg Ile Val Thr Val Leu Pro Gly
        675                 680                 685
Leu Pro Thr Ser Pro Asp Ser Ala Ser Ser Ala Cys Gly Asn Ser Ser
    690                 695                 700
Ala Thr Lys Pro Asp Lys Asp Ser
705                 710
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<210> 6
<211> 4182
<212> DNA
<213> Homo sapiens

<400> 6

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aagcactccg acaccaagaa gaacaccaaa aagcggcact ccttcacttc cctcactatg 180
gccaacaagt cctcccaggc atcccagaac cgccactcca tggagatcag ccccccctgtc 240
ctcatcagct ccagcaaccc cactgctgct gcacggatca gcgagctgtc tgggctctcc 300
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gcctccacac caccaggcgc caccgccgct gctgctgctg ctggaatggg accgaggccc 540
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<210> 7
<211> 638
<212> PRT
<213> Homo sapiens

<400> 7
Ile Ser Tyr Val Glu Phe Asn Ser Ala Ala Lys Gln Leu Ile Glu Trp
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Asp Lys Pro Pro Val Pro Gly Val Asp Ala Gly Glu Cys Ser Ser Ala
            20   25   30

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Ala Ala Gln Ser Ser Thr Ala Pro Lys His Ser Asp Thr Lys Lys Asn
        35                  40                  45
Thr Lys Lys Arg His Ser Phe Thr Ser Leu Thr Met Ala Asn Lys Ser
    50                  55                  60
Ser Gln Ala Ser Gln Asn Arg His Ser Met Glu Ile Ser Pro Pro Val
65                  70                  75                  80
Leu Ile Ser Ser Ser Asn Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu
                85                  90                  95
Ser Gly Leu Ser Cys Ser Ala Pro Ser Gln Val His Ile Ser Thr Thr
            100                 105                 110
Gly Leu Ile Val Thr Pro Pro Pro Ser Ser Pro Val Thr Thr Gly Pro
        115                 120                 125
Ser Phe Thr Phe Pro Ser Asp Val Pro Tyr Gln Ala Ala Leu Gly Thr
    130                 135                 140
Leu Asn Pro Pro Leu Pro Pro Pro Pro Leu Leu Ala Ala Thr Val Leu
145                 150                 155                 160
Ala Ser Thr Pro Pro Gly Ala Thr Ala Ala Ala Ala Ala Ala Gly Met
                165                 170                 175
Gly Pro Arg Pro Met Ala Gly Ser Thr Asp Gln Ile Ala His Leu Arg
            180                 185                 190
Pro Gln Thr Arg Pro Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro
        195                 200                 205
Arg Lys Glu Asp Glu Leu Glu Leu Arg Lys Gly Glu Met Phe Leu Val
    210                 215                 220
Phe Glu Arg Cys Gln Asp Gly Trp Phe Lys Gly Thr Ser Met His Thr
225                 230                 235                 240
Ser Lys Ile Gly Val Phe Pro Gly Asn Tyr Val Ala Pro Val Thr Arg
                245                 250                 255
Ala Val Thr Asn Ala Ser Gln Ala Lys Val Pro Met Ser Thr Ala Gly
            260                 265                 270
Gln Thr Ser Arg Gly Val Thr Met Val Ser Pro Ser Thr Ala Gly Gly
        275                 280                 285
Pro Ala Gln Lys Leu Gln Gly Asn Gly Val Ala Gly Ser Pro Ser Val
    290                 295                 300
Val Pro Ala Ala Val Val Ser Ala Ala His Ile Gln Thr Ser Pro Gln
305                 310                 315                 320
Ala Lys Val Leu Leu His Met Thr Gly Gln Met Thr Val Asn Gln Ala
                325                 330                 335
Arg Asn Ala Val Arg Thr Val Ala Ala His Asn Gln Glu Arg Pro Thr
            340                 345                 350
Ala Ala Val Thr Pro Ile Gln Val Gln Asn Ala Ala Gly Leu Ser Pro
        355                 360                 365
Ala Ser Val Gly Leu Ser His His Ser Leu Ala Ser Pro Gln Pro Ala
    370                 375                 380
Pro Leu Met Pro Gly Ser Ala Thr His Thr Ala Ala Ile Ser Ile Ser
385                 390                 395                 400
Arg Ala Ser Ala Pro Leu Ala Cys Ala Ala Ala Ala Pro Leu Thr Ser
                405                 410                 415
Pro Ser Ile Thr Ser Ala Ser Leu Glu Ala Glu Pro Ser Gly Arg Ile
            420                 425                 430
Val Thr Val Leu Pro Gly Leu Pro Thr Ser Pro Asp Ser Ala Ser Ser
        435                 440                 445
Ala Cys Gly Asn Ser Ser Ala Thr Lys Pro Asp Lys Asp Ser Lys Lys
    450                 455                 460
Glu Lys Lys Gly Leu Leu Lys Leu Leu Ser Gly Ala Ser Thr Lys Arg
465                 470                 475                 480
Lys Pro Arg Val Ser Pro Pro Ala Ser Pro Thr Leu Glu Val Glu Leu
                485                 490                 495
```

```
Gly Ser Ala Glu Leu Pro Leu Gln Gly Ala Val Gly Pro Glu Leu Pro
            500                 505                 510
Pro Gly Gly Gly His Gly Arg Ala Gly Ser Cys Pro Val Asp Gly Asp
        515                 520                 525
Gly Pro Val Thr Thr Ala Val Ala Gly Ala Ala Leu Ala Gln Asp Ala
    530                 535                 540
Phe His Arg Lys Ala Ser Ser Leu Asp Ser Ala Val Pro Ile Ala Pro
545                 550                 555                 560
Pro Pro Arg Gln Ala Cys Ser Ser Leu Gly Pro Val Leu Asn Glu Ser
                565                 570                 575
Arg Pro Val Val Cys Glu Arg His Arg Val Val Val Ser Tyr Pro Pro
            580                 585                 590
Gln Ser Glu Ala Glu Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val
        595                 600                 605
His Lys Lys Arg Glu Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn
    610                 615                 620
Gly Lys Thr Gly Leu Phe Pro Gly Ser Phe Val Glu Asn Ile
625                 630                 635
```

<210> 8
<211> 3206
<212> DNA
<213> Mouse

<400> 8

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cagtaacatc ctactggtca gacttctgga tggcatcaag cagaggcctt ggaaacccgg 420
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<210> 9
<211> 892
<212> PRT
<213> Mouse

<400> 9

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Glu Arg Leu Asp Ala Ser Ala Lys Val Leu Pro Cys Gln His Thr Phe
            20                  25                  30
Cys Lys Arg Cys Leu Leu Gly Ile Val Gly Ser Arg Asn Glu Leu Arg
        35                  40                  45
Cys Pro Glu Cys Arg Thr Leu Val Gly Ser Gly Val Asp Glu Leu Pro
    50                  55                  60
Ser Asn Ile Leu Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro
65                  70                  75                  80
Trp Lys Pro Gly Pro Gly Gly Gly Gly Gly Thr Thr Cys Thr Asn Thr
                85                  90                  95
Leu Arg Ala Gln Gly Ser Thr Val Val Asn Cys Gly Ser Lys Asp Leu
            100                 105                 110
Gln Ser Ser Gln Cys Gly Gln Gln Pro Arg Val Gln Ala Trp Ser Pro
        115                 120                 125
Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
    130                 135                 140
Tyr Glu Gly Lys Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Thr
145                 150                 155                 160
Ile Ile Leu Arg Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val
                165                 170                 175
Ser Gly Val His Gly Phe Phe Pro Thr Asn Phe Val Gln Ile Ile Lys
            180                 185                 190
Pro Leu Pro Gln Pro Pro Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu
        195                 200                 205
Val Lys Asp Lys Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp
    210                 215                 220
Asp Val Leu Thr Val Ile Arg Arg Val Asp Glu Asn Trp Ala Glu Gly
225                 230                 235                 240
```

```
Met Leu Ala Asp Lys Ile Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe
                245                 250                 255
Asn Ser Ala Ala Lys Gln Leu Ile Glu Trp Asp Lys Pro Pro Val Pro
            260                 265                 270
Gly Val Asp Thr Ala Glu Cys Pro Ser Ala Thr Ala Gln Ser Thr Ser
        275                 280                 285
Ala Ser Lys His Pro Asp Thr Lys Lys Asn Thr Arg Lys Arg His Ser
    290                 295                 300
Phe Thr Ser Leu Thr Met Ala Asn Lys Ser Ser Gln Gly Ser Gln Asn
305                 310                 315                 320
Arg His Ser Met Glu Ile Ser Pro Pro Val Leu Ile Ser Ser Ser Asn
                325                 330                 335
Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu Ser Gly Leu Ser Cys Ser
            340                 345                 350
Ala Pro Ser Gln Val His Ile Ser Thr Thr Gly Leu Ile Val Thr Pro
        355                 360                 365
Pro Pro Ser Ser Pro Val Thr Thr Gly Pro Ala Phe Thr Phe Pro Ser
    370                 375                 380
Asp Val Pro Tyr Gln Ala Ala Leu Gly Ser Met Asn Pro Pro Leu Pro
385                 390                 395                 400
Pro Pro Pro Leu Leu Ala Ala Thr Val Leu Ala Ser Thr Pro Ser Gly
                405                 410                 415
Ala Thr Ala Ala Val Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly
            420                 425                 430
Met Gly Pro Arg Pro Val Met Gly Ser Ser Glu Gln Ile Ala His Leu
        435                 440                 445
Arg Pro Gln Thr Arg Pro Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr
    450                 455                 460
Pro Arg Lys Glu Asp Glu Leu Glu Leu Arg Lys Gly Glu Met Phe Leu
465                 470                 475                 480
Val Phe Glu Arg Cys Gln Asp Gly Trp Tyr Lys Gly Thr Ser Met His
                485                 490                 495
Thr Ser Lys Ile Gly Val Phe Pro Gly Asn Tyr Val Ala Pro Val Thr
            500                 505                 510
Arg Ala Val Thr Asn Ala Ser Gln Ala Lys Val Ser Met Ser Thr Ala
        515                 520                 525
Gly Gln Ala Ser Arg Gly Val Thr Met Val Ser Pro Ser Thr Ala Gly
    530                 535                 540
Gly Pro Thr Gln Lys Pro Gln Gly Asn Gly Val Ala Gly Asn Pro Ser
545                 550                 555                 560
Val Val Pro Thr Ala Val Val Ser Ala Ala His Ile Gln Thr Ser Pro
                565                 570                 575
Gln Ala Lys Val Leu Leu His Met Ser Gly Gln Met Thr Val Asn Gln
            580                 585                 590
Ala Arg Asn Ala Val Arg Thr Val Ala Ala His Ser Gln Glu Arg Pro
        595                 600                 605
Thr Ala Ala Val Thr Pro Ile Gln Val Gln Asn Ala Ala Cys Leu Gly
    610                 615                 620
Pro Ala Ser Val Gly Leu Pro His His Ser Leu Ala Ser Gln Pro Leu
625                 630                 635                 640
Pro Pro Met Ala Gly Pro Ala Ala His Gly Ala Ala Val Ser Ile Ser
                645                 650                 655
Arg Thr Asn Ala Pro Met Ala Cys Ala Ala Gly Ala Ser Leu Ala Ser
            660                 665                 670
Pro Asn Met Thr Ser Ala Met Leu Glu Thr Glu Pro Ser Gly Arg Thr
        675                 680                 685
Val Thr Ile Leu Pro Gly Leu Pro Thr Ser Pro Glu Ser Ala Ala Ser
    690                 695                 700
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Ala Cys Gly Asn Ser Ser Ala Gly Lys Pro Asp Lys Asp Ser Lys Lys
705                 710                 715                 720
Glu Lys Lys Gly Leu Leu Lys Leu Leu Ser Gly Ala Ser Thr Lys Arg
                725                 730                 735
Lys Pro Arg Val Ser Pro Pro Ala Ser Pro Thr Leu Asp Val Glu Leu
            740                 745                 750
Gly Ala Gly Glu Ala Pro Leu Gln Gly Ala Val Gly Pro Glu Leu Pro
        755                 760                 765
Leu Gly Gly Ser His Gly Arg Val Gly Ser Cys Pro Thr Asp Gly Asp
    770                 775                 780
Gly Pro Val Ala Ala Gly Thr Ala Ala Leu Ala Gln Asp Ala Phe His
785                 790                 795                 800
Arg Lys Thr Ser Ser Leu Asp Ser Ala Val Pro Ile Ala Pro Pro Pro
                805                 810                 815
Arg Gln Ala Cys Ser Ser Leu Gly Pro Val Met Asn Glu Ala Arg Pro
            820                 825                 830
Val Val Cys Glu Arg His Arg Val Val Val Ser Tyr Pro Pro Gln Ser
        835                 840                 845
Glu Ala Glu Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val His Lys
    850                 855                 860
Lys Arg Glu Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn Gly Lys
865                 870                 875                 880
Thr Gly Leu Phe Pro Gly Ser Phe Val Glu Asn Ile
                885                 890
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<210> 10
<211> 3149
<212> DNA
<213> Drosophila melanogaster

<400> 10

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agcgattata atagtagatt ttagcatttg agctaaattt atttcccaac cgcgtcttgg 180
gattgcgtat gcgtgagcca gtacctgcat gtgtgtgtgt tttggaatgt ggccctgcac 240
gaaattcaaa tagtgaccat ccttgagatt ttgcatactg gcaagatgga cgagcacacg 300
ttaaacgacc tgttggagtg ctccgtgtgt cttgagcgac tggacaccac atcgaaggtg 360
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aagttgcgat gcccggagtg ccgcatcctg gtctcttgca aaattgatga gctgcctcca 480
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gaagaaaagg gagaggagac tgaaacacag ccggaaaggg ccaaacctca gccgccagcg 600
gaatcagtgg ccccgcctga caaccaacta ctccagctgc agtcacatca gcaatctcat 660
cagccggctc gtcacaagca acgtcgattt ctactccccc acgcctatgc cctctttgac 720
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tcgcgtgtac ttaagaccac tgttcagcag cagatgcaac cgaatttacc ctggggatac 1560
ttagccctgt tcccatacaa accacgccaa acggatgagc tggaattaaa aaagggttgt 1620
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gtttacattg tgaccgaacg atgtgtggac ggttggttca agggaaaaaa ctggttggac 1680
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ttaatgcatc aatggaaata tgttccccaa aatgcagacg cccagatggc acaagtacag 1800
cagcatccag ttgcaccaga tgtgcgactc aacaacatgc tgtccatgca accgcctgat 1860
ttgccacctc gtcagcagca ggctaccgcc acgaccacca gttgctctgt gtggtcgaaa 1920
ccagtggagg cgctgttcag cagaaaatcg gagcccaagc ctgaaactgc cacagcttcg 1980
actacgagca gcagttcctc tggagcagtg ggacttatga ggagattaac tcacatgaaa 2040
acacgctcca aatctccggg agcgtccttg cagcaagttc cgaaagaagc tattagcaca 2100
aatgtggaat ttacaacaaa cccatcagct aaattgcatc cagtacatgt aagatccggc 2160
tcgtgcccca gtcagctgca gcacagtcaa ccgctcaatg aaactccagc agccaagaca 2220
gcggcacaac aacagcagtt cctacccaag cagctgcctt ccgcttctac gaacagcgtt 2280
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cacagcctag atgcgagtca tgtgctgagt cccagcagca atatgatcac ggaggcggcc 2580
attaaggcca gcgccaccac taagtctcct tactgcacga gggaaagtcg attccgctgc 2640
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gctagccatg taagacttag ggaacagtta cttaagcctt agcgattagt tagctagaga 3060
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ataaaaaaaa aaaaaaaaaa aaaaaaaaa                                    3149
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<210> 11
<211> 838
<212> PRT
<213> Drosophila melanogaster

<400> 11

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Met Asp Glu His Thr Leu Asn Asp Leu Leu Glu Cys Ser Val Cys Leu
 1               5                  10                  15
Glu Arg Leu Asp Thr Thr Ser Lys Val Leu Pro Cys Gln His Thr Phe
            20                  25                  30
Cys Arg Lys Cys Leu Gln Asp Ile Val Ala Ser Gln His Lys Leu Arg
        35                  40                  45
Cys Pro Glu Cys Arg Ile Leu Val Ser Cys Lys Ile Asp Glu Leu Pro
    50                  55                  60
Pro Asn Val Leu Leu Met Arg Ile Leu Glu Gly Met Lys Gln Asn Ala
65                  70                  75                  80
Ala Ala Gly Lys Gly Glu Glu Lys Gly Glu Glu Thr Glu Thr Gln Pro
                85                  90                  95
Glu Arg Ala Lys Pro Gln Pro Pro Ala Glu Ser Val Ala Pro Pro Asp
            100                 105                 110
Asn Gln Leu Leu Gln Leu Gln Ser His Gln Gln Ser His Gln Pro Ala
        115                 120                 125
Arg His Lys Gln Arg Arg Phe Leu Leu Pro His Ala Tyr Ala Leu Phe
    130                 135                 140
Asp Phe Ala Ser Gly Glu Ala Thr Asp Leu Lys Phe Lys Lys Gly Asp
145                 150                 155                 160
Leu Ile Leu Ile Lys His Arg Ile Asp Asn Asn Trp Phe Val Gly Gln
                165                 170                 175
Ala Asn Gly Gln Glu Gly Thr Phe Pro Ile Asn Tyr Val Lys Val Ser
            180                 185                 190
Val Pro Leu Pro Met Pro Gln Cys Ile Ala Met Tyr Asp Phe Lys Met
        195                 200                 205
```

```
Gly Pro Asn Asp Glu Glu Gly Cys Leu Glu Phe Lys Lys Ser Thr Val
    210                 215                 220
Ile Gln Val Met Arg Arg Val Asp His Asn Trp Ala Glu Gly Arg Ile
225                 230                 235                 240
Gly Gln Thr Ile Gly Ile Phe Pro Ile Ala Phe Val Glu Leu Asn Ala
                245                 250                 255
Ala Ala Lys Lys Leu Leu Asp Ser Gly Leu His Thr His Pro Phe Cys
            260                 265                 270
His Pro Pro Lys Gln Gln Gly Gln Arg Ala Leu Pro Pro Val Pro Val
        275                 280                 285
Ile Asp Pro Thr Val Val Thr Glu Ser Ser Ser Gly Ser Ser Asn Ser
    290                 295                 300
Thr Pro Gly Ser Ser Asn Ser Ser Ser Thr Ser Ser Ser Asn Asn Cys
305                 310                 315                 320
Ser Pro Asn His Gln Ile Ser Leu Pro Asn Thr Pro Gln His Val Val
                325                 330                 335
Ala Ser Gly Ser Ala Ser Val Arg Phe Arg Asp Lys Gly Ala Lys Glu
            340                 345                 350
Lys Arg His Ser Leu Asn Ala Leu Leu Gly Gly Gly Ala Pro Leu Ser
        355                 360                 365
Leu Leu Gln Thr Asn Arg His Ser Ala Glu Ile Leu Ser Leu Pro His
    370                 375                 380
Glu Leu Ser Arg Leu Glu Val Ser Ser Ser Thr Ala Leu Lys Pro Thr
385                 390                 395                 400
Ser Ala Pro Gln Thr Ser Arg Val Leu Lys Thr Thr Val Gln Gln Gln
                405                 410                 415
Met Gln Pro Asn Leu Pro Trp Gly Tyr Leu Ala Leu Phe Pro Tyr Lys
            420                 425                 430
Pro Arg Gln Thr Asp Glu Leu Glu Leu Lys Lys Gly Cys Val Tyr Ile
        435                 440                 445
Val Thr Glu Arg Cys Val Asp Gly Trp Phe Lys Gly Lys Asn Trp Leu
    450                 455                 460
Asp Ile Thr Gly Val Phe Pro Gly Asn Tyr Leu Thr Pro Leu Arg Ala
465                 470                 475                 480
Arg Asp Gln Gln Gln Leu Met His Gln Trp Lys Tyr Val Pro Gln Asn
                485                 490                 495
Ala Asp Ala Gln Met Ala Gln Val Gln Gln His Pro Val Ala Pro Asp
            500                 505                 510
Val Arg Leu Asn Asn Met Leu Ser Met Gln Pro Pro Asp Leu Pro Pro
        515                 520                 525
Arg Gln Gln Gln Ala Thr Ala Thr Thr Thr Ser Cys Ser Val Trp Ser
    530                 535                 540
Lys Pro Val Glu Ala Leu Phe Ser Arg Lys Ser Glu Pro Lys Pro Glu
545                 550                 555                 560
Thr Ala Thr Ala Ser Thr Thr Ser Ser Ser Ser Ser Gly Ala Val Gly
                565                 570                 575
Leu Met Arg Arg Leu Thr His Met Lys Thr Arg Ser Lys Ser Pro Gly
            580                 585                 590
Ala Ser Leu Gln Gln Val Pro Lys Glu Ala Ile Ser Thr Asn Val Glu
        595                 600                 605
Phe Thr Thr Asn Pro Ser Ala Lys Leu His Pro Val His Val Arg Ser
    610                 615                 620
Gly Ser Cys Pro Ser Gln Leu Gln His Ser Gln Pro Leu Asn Glu Thr
625                 630                 635                 640
Pro Ala Ala Lys Thr Ala Ala Gln Gln Gln Gln Phe Leu Pro Lys Gln
                645                 650                 655
Leu Pro Ser Ala Ser Thr Asn Ser Val Ser Tyr Gly Ser Gln Arg Val
            660                 665                 670
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```
Lys Gly Ser Lys Glu Arg Pro His Leu Ile Cys Ala Arg Gln Ser Leu
        675                 680                 685
Asp Ala Ala Thr Phe Arg Ser Met Tyr Asn Asn Ala Ala Ser Pro Pro
    690                 695                 700
Pro Pro Thr Thr Ser Val Ala Pro Ala Val Tyr Ala Gly Gly Gln Gln
705                 710                 715                 720
Gln Val Ile Pro Gly Gly Gly Ala Gln Ser Gln Leu His Ala Asn Met
                725                 730                 735
Ile Ile Ala Pro Ser His Arg Lys Ser His Ser Leu Asp Ala Ser His
            740                 745                 750
Val Leu Ser Pro Ser Ser Asn Met Ile Thr Glu Ala Ala Ile Lys Ala
        755                 760                 765
Ser Ala Thr Thr Lys Ser Pro Tyr Cys Thr Arg Glu Ser Arg Phe Arg
    770                 775                 780
Cys Ile Val Pro Tyr Pro Pro Asn Ser Asp Ile Glu Leu Glu Leu His
785                 790                 795                 800
Leu Gly Asp Ile Ile Tyr Val Gln Arg Lys Gln Lys Asn Gly Trp Tyr
                805                 810                 815
Lys Gly Thr His Ala Arg Thr His Lys Thr Gly Leu Phe Pro Ala Ser
            820                 825                 830
Phe Val Glu Pro Asp Cys
        835
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<210> 12
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 12
cttgccttgc cagcatac 18

<210> 13
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 13
ctgccagcat tccttcag 18

<210> 14
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 14
aacagaggcc ttggaaacct g 21

<210> 15
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 15
ttcagaggcc uuggaaaccu g 21

<210> 16
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 16
ttcagguuuc caaggccucu g 21

<210> 17
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 17
aaagagcctg gagaccttaa a 21

<210> 18
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 18
ttagagccug gagaccuuaa a 21

<210> 19
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 19
ttuuuaaggu cuccaggcuc u 21

<210> 20
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> target sequence

<400> 20
aaggattggt atgtgactct g 21

<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 21
ttggauuggu augugacucu g 21

<210> 22
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 22
ttcagaguca cauaccaauc c 21

<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 23
aagctggatt atctcctgtt g 21

<210> 24
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 24
ttgcuggauu aucuccuguu g 21

<210> 25
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 25
ttcaacagga gauaauccag c 21

<210> 26
<211> 41
<212> PRT
<213> Artificial Sequence

<220>
<223> RING domain

<400> 26
Cys Pro Val Cys Leu Glu Arg Leu Asp Ala Ser Ala Lys Val Leu Pro
 1   5   10   15
Cys Gln His Thr Phe Cys Lys Arg Cys Leu Leu Gly Ile Val Gly Ser
            20   25   30
Arg Asn Glu Leu Arg Cys Pro Glu Cys
        35   40

<210> 27
<211> 56
<212> PRT
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 27
Pro Cys Ala Lys Ala Leu Tyr Asn Tyr Glu Gly Lys Glu Pro Gly Asp
 1   5   10   15
Leu Lys Phe Ser Lys Gly Asp Ile Ile Ile Leu Arg Arg Gln Val Asp
            20   25   30
Glu Asn Trp Tyr His Gly Glu Val Asn Gly Ile His Gly Phe Phe Pro
        35   40   45
Thr Asn Phe Val Gln Ile Ile Lys
    50   55

<210> 28
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 28
Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu Val Lys Asp Lys Glu Ala
 1   5   10   15
Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp Asp Val Leu Thr Val Ile
            20   25   30
Arg Arg Val Asp Glu Asn Trp Ala Glu Gly Met Leu Ala Asp Lys Ile
        35   40   45
Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe Asn Ser
    50   55   60

<210> 29
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 29
Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu
 1   5   10   15
Leu Glu Leu Arg Lys Gly Glu Met Phe Leu Val Phe Glu Arg Cys Gln
            20   25   30
Asp Gly Trp Phe Lys Gly Thr Ser Met His Thr Ser Lys Ile Gly Val
        35   40   45
Phe Pro Gly Asn Tyr Val Ala Pro Val Thr
    50   55

<210> 30
<211> 57
<212> PRT
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 30
Glu Arg His Arg Val Val Val Ser Tyr Pro Pro Gln Ser Glu Ala Glu
 1   5   10   15
Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val His Lys Lys Arg Glu
            20   25   30
Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn Gly Lys Thr Gly Leu
        35   40   45
Phe Pro Gly Ser Phe Val Glu Asn Ile
    50   55

<210> 31
<211> 121
<212> DNA
<213> Artificial Sequence

<220>
<223> RING domain

<400> 31
tgtccggtgt gtctagagcg ccttgatgct tctgcgaagg tcttgccttg ccagcatacg 60
ttttgcaagc gatgtttgct ggggatcgta ggttctcgaa atgaactcag atgtcccgag 120
t   121

<210> 32
<211> 165
<212> DNA
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 32
ccatgtgcca aagcgttata caactatgaa ggaaaagagc ctggagacct taaattcagc 60
aaaggcgaca tcatcatttt gcgaagacaa gtggatgaaa attggtacca tggggaagtc 120
aatggaatcc atggcttttt ccccaccaac tttgtgcaga ttatt   165

<210> 33
<211> 177
<212> DNA
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 33
cctcagtgca aagcacttta tgactttgaa gtgaaagaca aggaagcaga caaagattgc 60
cttccatttg caaaggatga tgttctgact gtgatccgaa gagtggatga aaactgggct 120
gaaggaatgc tggcagacaa aataggaata tttccaattt catatgttga gtttaac 177

<210> 34
<211> 171
<212> DNA
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 34
agtgtgtatg ttgctatata tccatacact cctcggaaag aggatgaact agagctgaga 60
aaaggggaga tgtttttagt gtttgagcgc tgccaggatg gctggttcaa agggacatcc 120
atgcatacca gcaagatagg ggttttccct ggcaattatg tggcaccagt c 171

<210> 35
<211> 169
<212> DNA
<213> Artificial Sequence

<220>
<223> SH3 domain

<400> 35
gaaaggcaca gggtggtggt ttcctatcct cctcagagtg aggcagaact tgaacttaaa 60
gaaggagata ttgtgtttgt tcataaaaaa cgagaggatg gctggttcaa aggcacatta 120
caacgtaatg ggaaaactgg ccttttccca ggaagctttg tggaaaaca 169

<210> 36
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 36
aagtccaaag gttccggaga c 21

<210> 37
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<220>

<221> VARIANT
<222> 2
<223> Xaa = Thr or Ser

<400> 37
Pro Xaa Ala Pro
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<210> 38
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 38
Pro Phe Arg Asp Tyr
 1   5

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 39
Arg Pro Glu Pro Thr Ala Pro
 1   5

<210> 40
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 40
Arg Gln Gly Pro Lys Glu Pro
 1   5

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 41
Arg Gln Gly Pro Lys Glu Pro Phe Arg
 1   5

<210> 42
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 42
Arg Pro Glu Pro Thr Ala Pro Glu Glu
1 5

<210> 43
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> motif

<400> 43
Arg Pro Leu Pro Val Ala Pro
1 5

<210> 44
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> scrambled human POSH oligonucleotide

<400> 44
cacacactgc cgtcaactgt tcaagagaca gttgacggca gtgtgtgttt ttt 53

<210> 45
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> scrambled human POSH oligonucleotide

<400> 45
aattaaaaaa cacacactgc cgtcaactgt ctcttgaaca gttgacggca gtgtgtgggc 60
c 61

<210> 46
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide encoding RNAi against human POSH

<400> 46

aacagaggcc ttggaaacct ggaagcttgc aggtttccaa ggcctctgtt 50

<210> 47
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide encoding RNAi against human POSH

<400> 47
gatcaacaga ggccttggaa acctgcaagc ttccaggttt ccaaggcctc tgtt 54

<210> 48
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 48
ggcccactag tcaaggtcgg gcaggaaga 29

<210> 49
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 49
gccgaattca aaaaggatcc ggcgatatcc ggtgtttcgt cctttcca 48

<210> 50
<211> 836
<212> PRT
<213> Artificial Sequence

<220>
<223> POSH fragment

<400> 50

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Arg Thr Leu Val Gly Ser Gly Val Glu Glu Leu Pro Ser Asn Ile Leu
 1               5                  10                  15
Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro Trp Lys Pro Gly
            20                  25                  30
Pro Gly Gly Gly Ser Gly Thr Asn Cys Thr Asn Ala Leu Arg Ser Gln
        35                  40                  45
Ser Ser Thr Val Ala Asn Cys Ser Ser Lys Asp Leu Gln Ser Ser Gln
    50                  55                  60
Gly Gly Gln Gln Pro Arg Val Gln Ser Trp Ser Pro Pro Val Arg Gly
65                  70                  75                  80
Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn Tyr Glu Gly Lys
                85                  90                  95
Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Ile Ile Ile Leu Arg
            100                 105                 110
```

```
Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val Asn Gly Ile His
        115                 120                 125
Gly Phe Phe Pro Thr Asn Phe Val Gln Ile Ile Lys Pro Leu Pro Gln
    130                 135                 140
Pro Pro Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu Val Lys Asp Lys
145                 150                 155                 160
Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp Asp Val Leu Thr
                165                 170                 175
Val Ile Arg Arg Val Asp Glu Asn Trp Ala Glu Gly Met Leu Ala Asp
            180                 185                 190
Lys Ile Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe Asn Ser Ala Ala
        195                 200                 205
Lys Gln Leu Ile Glu Trp Asp Lys Pro Pro Val Pro Gly Val Asp Ala
    210                 215                 220
Gly Glu Cys Ser Ser Ala Ala Ala Gln Ser Ser Thr Ala Pro Lys His
225                 230                 235                 240
Ser Asp Thr Lys Lys Asn Thr Lys Lys Arg His Ser Phe Thr Ser Leu
                245                 250                 255
Thr Met Ala Asn Lys Ser Ser Gln Ala Ser Gln Asn Arg His Ser Met
            260                 265                 270
Glu Ile Ser Pro Pro Val Leu Ile Ser Ser Ser Asn Pro Thr Ala Ala
        275                 280                 285
Ala Arg Ile Ser Glu Leu Ser Gly Leu Ser Cys Ser Ala Pro Ser Gln
    290                 295                 300
Val His Ile Ser Thr Thr Gly Leu Ile Val Thr Pro Pro Pro Ser Ser
305                 310                 315                 320
Pro Val Thr Thr Gly Pro Ser Phe Thr Phe Pro Ser Asp Val Pro Tyr
                325                 330                 335
Gln Ala Ala Leu Gly Thr Leu Asn Pro Pro Leu Pro Pro Pro Pro Leu
            340                 345                 350
Leu Ala Ala Thr Val Leu Ala Ser Thr Pro Pro Gly Ala Thr Ala Ala
        355                 360                 365
Ala Ala Ala Ala Gly Met Gly Pro Arg Pro Met Ala Gly Ser Thr Asp
    370                 375                 380
Gln Ile Ala His Leu Arg Pro Gln Thr Arg Pro Ser Val Tyr Val Ala
385                 390                 395                 400
Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu Leu Glu Leu Arg Lys
                405                 410                 415
Gly Glu Met Phe Leu Val Phe Glu Arg Cys Gln Asp Gly Trp Phe Lys
            420                 425                 430
Gly Thr Ser Met His Thr Ser Lys Ile Gly Val Phe Pro Gly Asn Tyr
        435                 440                 445
Val Ala Pro Val Thr Arg Ala Val Thr Asn Ala Ser Gln Ala Lys Val
    450                 455                 460
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Asn Gln Glu Arg Pro Thr Ala Ala Val Thr Pro Ile Gln Val Gln Asn
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Gly Ala Ser Thr Lys Arg Lys Pro Arg Val Ser Pro Pro Ala Ser Pro
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Thr Leu Glu Val Glu Leu Gly Ser Ala Glu Leu Pro Leu Gln Gly Ala
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Cys Pro Val Asp Gly Asp Gly Pro Val Thr Thr Ala Val Ala Gly Ala
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Ala Leu Ala Gln Asp Ala Phe His Arg Lys Ala Ser Ser Leu Asp Ser
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Ala Val Pro Ile Ala Pro Pro Pro Arg Gln Ala Cys Ser Ser Leu Gly
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Pro Val Leu Asn Glu Ser Arg Pro Val Val Cys Glu Arg His Arg Val
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<213> Homo sapiens

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ccatcgcaaa ctgatggtgt ttgtgctgta gctgttggag gctttgacag gaatggactg 1320
gatcacctga ctccagctag attgcctctc ctggacatgg caatgatgag tttttaaaaa 1380

acagtgtgga tgatgatatg cttttgtgag caagcaaaag cagaaacgtg aagccgtgat 1440
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tatatactct atgtagttta ataagcactg tacgtagaag gccttaggtg ttgcatgtct 1560
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ccctg 1865

<210> 58
<211> 1884
<212> DNA
<213> Homo sapiens

<400> 58
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ccgtcacgct cctggtgaag agccccaacc agcgccaccg cgacttggag ctgagtggcg 180
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cgcgtccaga ggaccagagg ttaatttatt ctgggaagct gttgttggat caccaatgtc 300
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aagttcttcg gaacctttct tcccctggat gggaaaacat ctcaaggcct gaagctgccc 540
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tgcggaggtg aaaacctttg ctgggttttc tgttcaataa agttttacta tgaatgaccc 1860
tgaaaaaaaa aaaaaaaaaa aaaa 1884

<210> 59
<211> 1860
<212> DNA
<213> Homo sapiens

<400> 59
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gtcacgctcc tggtgaagag ccccaaccag cgccaccgcg acttggagct gagtggcgac 180
cgcggctgga gtgtgggcca cctcaaggcc cacctgagcc gcgtctaccc cgagcgtccg 240

cgtccagagg accagaggtt aatttattct gggaagctgt tgttggatca ccaatgtctc 300
agggacttgc ttccaaagca ggaaaaacgg catgttttgc atctggtgtg caatgtgaag 360
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gttcttcgga acctttcttc ccctggatgg gaaaacatct caaggcctga agctgcccag 540
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gctgcatcag gggcttttgt tccaccacca agtgcacaag agatacctgt ggtctctgca 720
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<210> 60
<211> 1884
<212> DNA
<213> Homo sapiens

<400> 60
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ccgtcacgct cctggtgaag agccccaacc agcgccaccg cgacttggag ctgagtggcg 180
accgcggctg gagtgtgggc cacctcaagg cccacctgag ccgcgtctac cccgagcgtc 240
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aagttcttcg gaacctttct tcccctggat gggaaaacat ctcaaggcct gaagctgccc 540
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tgcggaggtg aaaacctttg ctgggttttc tgttcaataa agttttacta tgaatgaccc 1860
tgaaaaaaaa aaaaaaaaaa aaaa 1884

<210> 61
<211> 232
<212> PRT
<213> Homo sapiens

<400> 61
Met Glu Ser Glu Thr Glu Pro Glu Pro Val Thr Leu Leu Val Lys Ser
1 5 10 15
Pro Asn Gln Arg His Arg Asp Leu Glu Leu Ser Gly Asp Arg Gly Trp
20 25 30
Ser Val Gly His Leu Lys Ala His Leu Ser Arg Val Tyr Pro Glu Arg
35 40 45
Pro Arg Pro Glu Asp Gln Arg Leu Ile Tyr Ser Gly Lys Leu Leu Leu
50 55 60
Asp His Gln Cys Leu Arg Asp Leu Leu Pro Lys Glu Lys Arg His Val
65 70 75 80
Leu His Leu Val Cys Asn Val Lys Ser Pro Ser Lys Met Pro Glu Ile
85 90 95
Asn Ala Lys Val Ala Glu Ser Thr Glu Glu Pro Ala Gly Ser Asn Arg
100 105 110
Gly Gln Tyr Pro Glu Asp Ser Ser Ser Asp Gly Leu Arg Gln Arg Glu
115 120 125
Val Leu Arg Asn Leu Ser Ser Pro Gly Trp Glu Asn Ile Ser Arg His
130 135 140
His Val Gly Trp Phe Pro Phe Arg Pro Arg Pro Val Gln Asn Phe Pro
145 150 155 160
Asn Asp Gly Pro Pro Pro Asp Val Val Asn Gln Asp Pro Asn Asn Asn
165 170 175
Leu Gln Glu Gly Thr Asp Pro Glu Thr Glu Asp Pro Asn His Leu Pro
180 185 190
Pro Asp Arg Asp Val Leu Asp Gly Glu Gln Thr Ser Pro Ser Phe Met
195 200 205
Ser Thr Ala Trp Leu Val Phe Lys Thr Phe Phe Ala Ser Leu Leu Pro
210 215 220
Glu Gly Pro Pro Ala Ile Ala Asn
225 230

<210> 62
<211> 209
<212> PRT
<213> Homo sapiens

<400> 62
Met Gln Tyr Leu Ala Ala Thr Ala Ala Ser Gly Ala Phe Val Pro Pro
1 5 10 15
Pro Ser Ala Gln Glu Ile Pro Val Val Ser Ala Pro Ala Pro Ala Pro
20 25 30
Ile His Asn Gln Phe Pro Ala Glu Asn Gln Pro Ala Asn Gln Asn Ala
35 40 45

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Ala Pro Gln Val Val Val Asn Pro Gly Ala Asn Gln Asn Leu Arg Met
    50                  55                  60
Asn Ala Gln Gly Gly Pro Ile Val Glu Glu Asp Asp Glu Ile Asn Arg
65                  70                  75                  80
Asp Trp Leu Asp Trp Thr Tyr Ser Ala Ala Thr Phe Ser Val Phe Leu
                85                  90                  95
Ser Ile Leu Tyr Phe Tyr Ser Ser Leu Ser Arg Phe Leu Met Val Met
            100                 105                 110
Gly Ala Thr Val Val Met Tyr Leu His His Val Gly Trp Phe Pro Phe
        115                 120                 125
Arg Pro Arg Pro Val Gln Asn Phe Pro Asn Asp Gly Pro Pro Pro Asp
    130                 135                 140
Val Val Asn Gln Asp Pro Asn Asn Asn Leu Gln Glu Gly Thr Asp Pro
145                 150                 155                 160
Glu Thr Glu Asp Pro Asn His Leu Pro Pro Asp Arg Asp Val Leu Asp
                165                 170                 175
Gly Glu Gln Thr Ser Pro Ser Phe Met Ser Thr Ala Trp Leu Val Phe
            180                 185                 190
Lys Thr Phe Phe Ala Ser Leu Leu Pro Glu Gly Pro Pro Ala Ile Ala
        195                 200                 205
Asn
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<210> 63
<211> 356
<212> PRT
<213> Homo sapiens

<400> 63

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Gly His Leu Lys Ala His Leu Ser Arg Val Tyr Pro Glu Arg Pro Arg
 1               5                  10                  15
Pro Glu Asp Gln Arg Leu Ile Tyr Ser Gly Lys Leu Leu Leu Asp His
            20                  25                  30
Gln Cys Leu Arg Asp Leu Leu Pro Lys Glu Lys Arg His Val Leu His
        35                  40                  45
Leu Val Cys Asn Val Lys Ser Pro Ser Lys Met Pro Glu Ile Asn Ala
    50                  55                  60
Lys Val Ala Glu Ser Thr Glu Glu Pro Ala Gly Ser Asn Arg Gly Gln
65                  70                  75                  80
Tyr Pro Glu Asp Ser Ser Ser Asp Gly Leu Arg Gln Arg Glu Val Leu
                85                  90                  95
Arg Asn Leu Ser Ser Pro Gly Trp Glu Asn Ile Ser Arg Pro Glu Ala
            100                 105                 110
Ala Gln Gln Ala Phe Gln Gly Leu Gly Pro Gly Phe Ser Gly Tyr Thr
        115                 120                 125
Pro Tyr Gly Trp Leu Gln Leu Ser Trp Phe Gln Gln Ile Tyr Ala Arg
    130                 135                 140
Gln Tyr Tyr Met Gln Tyr Leu Ala Ala Thr Ala Ala Ser Gly Ala Phe
145                 150                 155                 160
Val Pro Pro Pro Ser Ala Gln Glu Ile Pro Val Val Ser Ala Pro Ala
                165                 170                 175
Pro Ala Pro Ile His Asn Gln Phe Pro Ala Glu Asn Gln Pro Ala Asn
            180                 185                 190
Gln Asn Ala Ala Pro Gln Val Val Val Asn Pro Gly Ala Asn Gln Asn
        195                 200                 205
Leu Arg Met Asn Ala Gln Gly Gly Pro Ile Val Glu Glu Asp Asp Glu
    210                 215                 220
```

```
Ile Asn Arg Asp Trp Leu Asp Trp Thr Tyr Ser Ala Ala Thr Phe Ser
225                 230                 235                 240
Val Phe Leu Ser Ile Leu Tyr Phe Tyr Ser Ser Leu Ser Arg Phe Leu
                245                 250                 255
Met Val Met Gly Ala Thr Val Val Met Tyr Leu His His Val Gly Trp
            260                 265                 270
Phe Pro Phe Arg Pro Arg Pro Val Gln Asn Phe Pro Asn Asp Gly Pro
        275                 280                 285
Pro Pro Asp Val Val Asn Gln Asp Pro Asn Asn Asn Leu Gln Glu Gly
    290                 295                 300
Thr Asp Pro Glu Thr Glu Asp Pro Asn His Leu Pro Pro Asp Arg Asp
305                 310                 315                 320
Val Leu Asp Gly Glu Gln Thr Ser Pro Ser Phe Met Ser Thr Ala Trp
                325                 330                 335
Leu Val Phe Lys Thr Phe Phe Ala Ser Leu Leu Pro Glu Gly Pro Pro
            340                 345                 350
Ala Ile Ala Asn
        355
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<210> 64
<211> 391
<212> PRT
<213> Homo sapiens

<400> 64

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Met Glu Ser Glu Thr Glu Pro Glu Pro Val Thr Leu Leu Val Lys Ser
 1               5                  10                  15
Pro Asn Gln Arg His Arg Asp Leu Glu Leu Ser Gly Asp Arg Gly Trp
            20                  25                  30
Ser Val Gly His Leu Lys Ala His Leu Ser Arg Val Tyr Pro Glu Arg
        35                  40                  45
Pro Arg Pro Glu Asp Gln Arg Leu Ile Tyr Ser Gly Lys Leu Leu Leu
    50                  55                  60
Asp His Gln Cys Leu Arg Asp Leu Leu Pro Lys Gln Glu Lys Arg His
65                  70                  75                  80
Val Leu His Leu Val Cys Asn Val Lys Ser Pro Ser Lys Met Pro Glu
                85                  90                  95
Ile Asn Ala Lys Val Ala Glu Ser Thr Glu Glu Pro Ala Gly Ser Asn
            100                 105                 110
Arg Gly Gln Tyr Pro Glu Asp Ser Ser Ser Asp Gly Leu Arg Gln Arg
        115                 120                 125
Glu Val Leu Arg Asn Leu Ser Ser Pro Gly Trp Glu Asn Ile Ser Arg
    130                 135                 140
Pro Glu Ala Ala Gln Gln Ala Phe Gln Gly Leu Gly Pro Gly Phe Ser
145                 150                 155                 160
Gly Tyr Thr Pro Tyr Gly Trp Leu Gln Leu Ser Trp Phe Gln Gln Ile
                165                 170                 175
Tyr Ala Arg Gln Tyr Tyr Met Gln Tyr Leu Ala Ala Thr Ala Ala Ser
            180                 185                 190
Gly Ala Phe Val Pro Pro Pro Ser Ala Gln Glu Ile Pro Val Val Ser
        195                 200                 205
Ala Pro Ala Pro Ala Pro Ile His Asn Gln Phe Pro Ala Glu Asn Gln
    210                 215                 220
Pro Ala Asn Gln Asn Ala Ala Pro Gln Val Val Val Asn Pro Gly Ala
225                 230                 235                 240
Asn Gln Asn Leu Arg Met Asn Ala Gln Gly Gly Pro Ile Val Glu Glu
                245                 250                 255
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Asp Asp Glu Ile Asn Arg Asp Trp Leu Asp Trp Thr Tyr Ser Ala Ala
            260                 265                 270
Thr Phe Ser Val Phe Leu Ser Ile Leu Tyr Phe Tyr Ser Ser Leu Ser
        275                 280                 285
Arg Phe Leu Met Val Met Gly Ala Thr Val Val Met Tyr Leu His His
    290                 295                 300
Val Gly Trp Phe Pro Phe Arg Pro Arg Pro Val Gln Asn Phe Pro Asn
305                 310                 315                 320
Asp Gly Pro Pro Pro Asp Val Val Asn Gln Asp Pro Asn Asn Asn Leu
                325                 330                 335
Gln Glu Gly Thr Asp Pro Glu Thr Glu Asp Pro Asn His Leu Pro Pro
            340                 345                 350
Asp Arg Asp Val Leu Asp Gly Glu Gln Thr Ser Pro Ser Phe Met Ser
        355                 360                 365
Thr Ala Trp Leu Val Phe Lys Thr Phe Phe Ala Ser Leu Leu Pro Glu
    370                 375                 380
Gly Pro Pro Ala Ile Ala Asn
385                 390
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<210> 65
<211> 1857
<212> DNA
<213> Rat

<400> 65

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cacgctgctg gtgaagagcc ccaatcagcg ccaccgcgac ttggagctga gtggcgaccg 180
cggttggagt gtgagtcgcc tcaaggccca cctgagccga gtctaccccg aacgcccgcg 240
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cctttgccgg gttttctgtt caataaagtt ttgctatgaa cgacaaaaaa aaaaaaa    1857
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<210> 66

<211> 391
<212> PRT
<213> Rat

<400> 66

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Met Glu Pro Glu Pro Gln Pro Glu Pro Val Thr Leu Leu Val Lys Ser
 1               5                  10                  15
Pro Asn Gln Arg His Arg Asp Leu Glu Leu Ser Gly Asp Arg Gly Trp
            20                  25                  30
Ser Val Ser Arg Leu Lys Ala His Leu Ser Arg Val Tyr Pro Glu Arg
        35                  40                  45
Pro Arg Pro Glu Asp Gln Arg Leu Ile Tyr Ser Gly Lys Leu Leu Leu
    50                  55                  60
Asp His Gln Cys Leu Gln Asp Leu Leu Pro Lys Gln Glu Lys Arg His
65                  70                  75                  80
Val Leu His Leu Val Cys Asn Val Arg Ser Pro Ser Lys Lys Pro Glu
                85                  90                  95
Ala Ser Thr Lys Gly Ala Glu Ser Thr Glu Gln Pro Asp Asn Thr Ser
            100                 105                 110
Gln Ala Gln Tyr Pro Gly Asp Ser Ser Ser Asp Gly Leu Arg Glu Arg
        115                 120                 125
Glu Val Leu Arg Asn Leu Pro Pro Ser Gly Trp Glu Asn Val Ser Arg
    130                 135                 140
Pro Glu Ala Val Gln Gln Thr Phe Gln Gly Leu Gly Pro Gly Phe Ser
145                 150                 155                 160
Gly Tyr Thr Thr Tyr Gly Trp Leu Gln Leu Ser Trp Phe Gln Gln Ile
                165                 170                 175
Tyr Ala Arg Gln Tyr Tyr Met Gln Tyr Leu Ala Ala Thr Ala Ala Ser
            180                 185                 190
Gly Ala Phe Gly Pro Thr Pro Ser Ala Gln Glu Ile Pro Val Val Ser
        195                 200                 205
Thr Pro Ala Pro Ala Pro Ile His Asn Gln Phe Pro Ala Glu Asn Gln
    210                 215                 220
Pro Ala Asn Gln Asn Ala Ala Ala Gln Ala Val Val Asn Pro Gly Ala
225                 230                 235                 240
Asn Gln Asn Leu Arg Met Asn Ala Gln Gly Gly Pro Leu Val Glu Glu
                245                 250                 255
Asp Asp Glu Ile Asn Arg Asp Trp Leu Asp Trp Thr Tyr Ser Ala Ala
            260                 265                 270
Thr Phe Ser Val Phe Leu Ser Ile Leu Tyr Phe Tyr Ser Ser Leu Ser
        275                 280                 285
Arg Phe Leu Met Val Met Gly Ala Thr Val Val Met Tyr Leu His His
    290                 295                 300
Val Gly Trp Phe Pro Phe Arg Gln Arg Pro Val Gln Asn Phe Pro Asp
305                 310                 315                 320
Asp Gly Pro Pro Gln Glu Ala Ala Asn Gln Asp Pro Asn Asn Asn Leu
                325                 330                 335
Gln Gly Gly Leu Asp Pro Glu Met Glu Asp Pro Asn Arg Leu Pro Val
            340                 345                 350
Gly Arg Glu Val Leu Asp Pro Glu His Thr Ser Pro Ser Phe Met Ser
        355                 360                 365
Thr Ala Trp Leu Val Phe Lys Thr Phe Phe Ala Ser Leu Leu Pro Glu
    370                 375                 380
Gly Pro Pro Ala Leu Ala Asn
385                 390
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<210> 67
<211> 1871

<212> DNA
<213> Mouse

<400> 67
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tcacgctgct ggtgaagagt cccaatcagc gccaccgcga cttggagctg agtggcgacc 180
gcagttggag tgtgagtcgc ctcaaggccc acctgagccg agtctacccc gagcgcccgc 240
gtccagagga ccagaggtta atttattctg ggaagctgct gttggatcac cagtgtctcc 300
aagatttgct tccaaagcag gaaaagcgac atgttttgca ccttgtgtgc aatgtgaaga 360
atccctccaa aatgccagaa accagcacaa agggtgctga atccacagag cagccggaca 420
actctaatca gacacagcat cctggggact cctcaagtga tggtttacgg caaagagaag 480
ttcttcggaa cctttctccc tccggatggg agaacatctc taggcctgag gctgtccagc 540
agactttcca aggcctgggg cctggcttct ctggctacac aacgtatggg tggctgcagc 600
tctcctggtt ccagcagatc tatgcaaggc agtactacat gcaatactta gctgccactg 660
ctgcatcagg aacttttgtc ccgacaccaa gtgcacaaga gatacctgtg gtctctacac 720
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cagctgctca agcggttgtc aatcccggag ccaatcagaa cttgcggatg aatgcacaag 840
gtggcccccc ggtggaggaa gatgatgaga taaaccgaga ctggttggat tggacctatt 900
ccgcagcgac gttttctgtt ttcctcagca tcctttactt ctactcctcg ctgagcagat 960
ttctcatggt catgggtgcc actgtagtca tgtacctgca ccacgtcggg tggtttccgt 1020
tcagacagag gccagttcag aacttcccgg atgatggtgg tcctcgagat gctgccaacc 1080
aggaccccaa caataacctc cagggaggta tggacccaga aatggaagac cccaaccgcc 1140
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cataggcact gtaagcagaa ggcccagggt cgcatgttct gcctgagcac ctccccagat 1560
gtgtgtgcat gtgtgctgta catggaagtc atagacgtgt gtgcatgtgt gctctacatg 1620
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attacactaa gtgtactact ttatataatc agtgaattgc tagacatgtt agcaggactt 1740
ttctaggaga gacttatgta taattgcttt ttaaaatgca gtgctttcct ttaaaccgag 1800
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tgaatgactg t 1871

<210> 68
<211> 391
<212> PRT
<213> Mouse

<400> 68
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            20   25   30
Ser Val Ser Arg Leu Lys Ala His Leu Ser Arg Val Tyr Pro Glu Arg
        35   40   45
Pro Arg Pro Glu Asp Gln Arg Leu Ile Tyr Ser Gly Lys Leu Leu Leu
    50   55   60
Asp His Gln Cys Leu Gln Asp Leu Leu Pro Lys Gln Glu Lys Arg His
65   70   75   80
Val Leu His Leu Val Cys Asn Val Lys Asn Pro Ser Lys Met Pro Glu
                85   90   95
Thr Ser Thr Lys Gly Ala Glu Ser Thr Glu Gln Pro Asp Asn Ser Asn
            100   105   110
Gln Thr Gln His Pro Gly Asp Ser Ser Ser Asp Gly Leu Arg Gln Arg
        115   120   125

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Glu Val Leu Arg Asn Leu Ser Pro Ser Gly Trp Glu Asn Ile Ser Arg
    130                 135                 140
Pro Glu Ala Val Gln Gln Thr Phe Gln Gly Leu Gly Pro Gly Phe Ser
145                 150                 155                 160
Gly Tyr Thr Thr Tyr Gly Trp Leu Gln Leu Ser Trp Phe Gln Gln Ile
                165                 170                 175
Tyr Ala Arg Gln Tyr Tyr Met Gln Tyr Leu Ala Ala Thr Ala Ala Ser
            180                 185                 190
Gly Thr Phe Val Pro Thr Pro Ser Ala Gln Glu Ile Pro Val Val Ser
        195                 200                 205
Thr Pro Ala Pro Ala Pro Ile His Asn Gln Phe Pro Ala Glu Asn Gln
    210                 215                 220
Pro Ala Asn Gln Asn Ala Ala Ala Gln Ala Val Val Asn Pro Gly Ala
225                 230                 235                 240
Asn Gln Asn Leu Arg Met Asn Ala Gln Gly Gly Pro Leu Val Glu Glu
                245                 250                 255
Asp Asp Glu Ile Asn Arg Asp Trp Leu Asp Trp Thr Tyr Ser Ala Ala
            260                 265                 270
Thr Phe Ser Val Phe Leu Ser Ile Leu Tyr Phe Tyr Ser Ser Leu Ser
        275                 280                 285
Arg Phe Leu Met Val Met Gly Ala Thr Val Val Met Tyr Leu His His
    290                 295                 300
Val Gly Trp Phe Pro Phe Arg Gln Arg Pro Val Gln Asn Phe Pro Asp
305                 310                 315                 320
Asp Gly Gly Pro Arg Asp Ala Ala Asn Gln Asp Pro Asn Asn Asn Leu
                325                 330                 335
Gln Gly Gly Met Asp Pro Glu Met Glu Asp Pro Asn Arg Leu Pro Pro
            340                 345                 350
Asp Arg Glu Val Leu Asp Pro Glu His Thr Ser Pro Ser Phe Met Ser
        355                 360                 365
Thr Ala Trp Leu Val Phe Lys Thr Phe Phe Ala Ser Leu Leu Pro Glu
    370                 375                 380
Gly Pro Pro Ala Leu Ala Asn
385                 390
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<210> 69
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 69
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<210> 70
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> siRNA

<400> 70
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